



SEQUENCE LISTING

<110> SCARPAGE, PHILIP J.
LI, GANG

<120> RAAV VECTOR-BASED PRO-OPIOMELANOCORTIN COMPOSITIONS AND METHODS
OF USE

<130> 4300.015400

<150> 60/462,496

<151> 2003-04-11

<160> 54

<170> PatentIn version 3.2

<210> 1

<211> 804

<212> DNA

<213> Homo sapiens

<400> 1

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ttcccgggaa atggcgacga gcagcctctg accgagaacc cccggaagta cgtcatgggc      240
cacttccgct gggaccgatt cggccgccgc aacagcagca gcagcggcag cagcggcgca      300
gggcagaagc gcgaggacgt ctacgcgggc gaagactgcg gcccgtgcc tgagggcggc      360
cccgagcccc gcagcgatgg tgccaagccg ggcccgcgcg agggcaagcg ctctactcc      420
atggagcaact tccgctgggg caagccggtg ggcaagaagc ggcgcccagt gaaggtgtac      480
cctaacggcg ccgaggacga gtcggccgag gccttcccc tggagttcaa gagggagctg      540
actggccagc gactccggga gggagatggc cccgacggcc ctgccgatga cggcgcaggg      600
gcccgaggcc acctggagca cagcctgctg gtggcggccg agaagaagga cgagggcccc      660
tacaggatgg agcacttccg ctggggcagc ccgccaagg acaagcgcta cggcggtttc      720
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<210> 2

<211> 267

<212> PRT

<213> Homo sapiens

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Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
 35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Met Phe Pro Gly Asn
 50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser Ser Ser Gly
 85 90 95

Ser Ser Gly Ala Gly Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp
 100 105 110

Cys Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala
 115 120 125

Lys Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe
 130 135 140

Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr
 145 150 155 160

Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe
 165 170 175

Lys Arg Glu Leu Thr Gly Gln Arg Leu Arg Glu Gly Asp Gly Pro Asp
 180 185 190

Gly Pro Ala Asp Asp Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser
 195 200 205

Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu
 210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
 225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
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Ala Ile Ile Lys Asn Ala Tyr Lys Lys Gly Glu
 260 265

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 <212> DNA
 <213> Gorilla gorilla

<400> 3
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 <211> 186
 <212> PRT
 <213> Gorilla gorilla

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 Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
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 Phe Gly Arg Arg Asn Ser Ser Ser Ser Gly Ser Gly Ala Gly Gln
 35 40 45
 Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu
 50 55 60
 Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg Glu
 65 70 75 80
 Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
 85 90 95

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
100 105 110

Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
115 120 125

Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly
130 135 140

Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala Glu
145 150 155 160

Lys Lys Asp Glu Gly Pro Tyr Gly Met Glu His Phe Arg Trp Gly Ser
165 170 175

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

<210> 5
<211> 795
<212> DNA
<213> Macaca nemestrina

<400> 5
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agcaacctgc tggagtgcac ccgggcctgc aagcccgacc ttccggccga gactccggtg 180
tttccgggca atggcgacga gcagcctctg accgagaacc cccggaagta cgtcatgggc 240
cacttccgct gggaccgatt cggccgccgc aacagtagca gcggcagcgc gcaccagaag 300
cgcgaggacg tcgcggctgg cgaagaccgc ggctgtctac ctgaggggtg ccccgagccc 360
cgtggcgatg gcgcggggcc gggcccgccg gagggcaagc gctcctactc catggagcac 420
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gacctggagc acagcctgct ggtggcggcc gagaagaagg atgagggccc ctacaggatg 660
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aagaagggcc agtga 795

<210> 6
 <211> 264
 <212> PRT
 <213> Macaca nemestrina

<400> 6

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Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
 20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
 35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
 50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser Ser Gly Ser
 85 90 95

Ala His Gln Lys Arg Glu Asp Val Ala Ala Gly Glu Asp Arg Gly Leu
 100 105 110

Leu Pro Glu Gly Gly Pro Glu Pro Arg Gly Asp Gly Ala Gly Pro Gly
 115 120 125

Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly
 130 135 140

Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly
 145 150 155 160

Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu
 165 170 175

Leu Thr Gly Gln Arg Pro Arg Ala Gly Asp Gly Pro Asp Gly Pro Ala
 180 185 190

Asp Asp Gly Ala Gly Pro Arg Ala Asp Leu Glu His Ser Leu Leu Val
 195 200 205

Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg
 210 215 220

Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser
 225 230 235 240

Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile
 245 250 255

Lys Asn Ala Tyr Lys Lys Gly Gln
 260

<210> 7
 <211> 496
 <212> DNA
 <213> Pongo pygmaeus

<400> 7
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 cgatgacggc gccggggccc gggccgacct ggagcacaac ctgctggtgg cggccgagaa 420
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<210> 8
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 <212> PRT
 <213> Pongo pygmaeus

<400> 8

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Ala Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro
 35 40 45

Arg Ser Asp Gly Ala Glu Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr
 50 55 60

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg
65 70 75 80

Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala
85 90 95

Phe Pro Leu Glu Phe Lys Arg Glu Pro Thr Gly Gln Arg Leu Arg Glu
100 105 110

Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly Ala Gly Ala Arg Ala
115 120 125

Asp Leu Glu His Asn Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly
130 135 140

Pro Tyr Arg Met Glu His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys
145 150 155 160

Arg Tyr Gly Gly Phe
165

<210> 9

<211> 804

<212> DNA

<213> Sus scroffa

<400> 9

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agtaacttgt tggcgtgcat ccgggcctgc aaaccagatc tctctgcgga gacgcccgtg	180
tttcccggca acggcgacgc gcaaccgtg accgagaacc cccggaagta cgtcatgggc	240
cacttccgct gggaccgctt cggccgccgg aatggcagca gcagcggcgg cggtggcggt	300
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gagctggagt acgggctggt ggccgaggcc gaggcggccg agaagaagga cgaagggcc	660
tataagatgg agcacttccg ctggggcagc ccgccaagg acaagcgcta cggcggttc	720
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804

<210> 10
<211> 267
<212> PRT
<213> Sus scroffa

<400> 10

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Leu Leu Gln Ala Ser Met Gly Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Ser Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Ala Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Gly
85 90 95

Gly Gly Gly Gly Gly Gly Gly Gly Ala Gly Gln Lys Arg Glu Glu Glu Glu
100 105 110

Val Ala Ala Gly Glu Gly Pro Gly Pro Arg Gly Asp Gly Val Ala Pro
115 120 125

Gly Pro Arg Gln Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp
130 135 140

Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn
145 150 155 160

Gly Ala Glu Asp Glu Leu Ala Glu Ala Phe Pro Leu Glu Phe Arg Arg
165 170 175

Glu Leu Ala Gly Ala Pro Pro Glu Pro Ala Arg Asp Pro Glu Ala Pro
180 185 190

Ala Glu Gly Ala Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala
195 200 205

Glu Ala Glu Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Lys Met Glu
 210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
 225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
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Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
 260 265

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 <212> DNA
 <213> Bos taurus

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 cacaagaagg gccagtga 798

<210> 12
 <211> 265
 <212> PRT
 <213> Bos taurus

<400> 12
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 Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
 35 40 45
 Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
 50 55 60
 Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80
 His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Ser
 85 90 95
 Gly Val Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
 100 105 110
 Glu Gly Pro Gly Pro Arg Gly Asp Asp Ala Glu Thr Gly Pro Arg Glu
 115 120 125
 Asp Lys Arg Ser Tyr Ser Met Glu His Phe Pro Trp Gly Lys Pro Val
 130 135 140
 Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
 145 150 155 160
 Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
 165 170 175
 Glu Arg Leu Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala
 180 185 190
 Ala Ala Arg Pro Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
 195 200 205
 Glu Ala Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe
 210 215 220
 Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr
 225 230 235 240
 Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
 245 250 255

Ile Lys Asn Ala His Lys Lys Gly Gln
 260 265

<210> 13
 <211> 663
 <212> DNA
 <213> Canis familiaris

<400> 13
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 taccccaacg gcgctgagga cgagtcggcc gaggccttcc ccgtcgagtt caagagggag 420
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 atc 663

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 <212> PRT
 <213> Canis familiaris

<400> 14
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 Gln Pro Leu Ala Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
 35 40 45
 Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ala Gly Gln Lys Arg Glu
 50 55 60
 Glu Glu Glu Val Ala Ala Gly Gly Gly Arg Ala Pro Leu Pro Ala Gly
 65 70 75 80

Gly Pro Gly Pro Arg Gly Asp Gly Gly Glu Leu Gly Leu Gln Glu Gly
 85 90 95
 Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly
 100 105 110
 Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu
 115 120 125
 Ser Ala Glu Ala Phe Pro Val Glu Phe Lys Arg Glu Leu Ala Gly Gln
 130 135 140
 Arg Leu Glu Pro Ala Leu Gly Pro Glu Gly Pro Ala Ala Gly Val Ala
 145 150 155 160
 Ala Leu Ala Asp Leu Glu Tyr Gly Leu Val Ala Glu Ala Gly Ala Ala
 165 170 175
 Glu Lys Lys Asp Asp Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly
 180 185 190
 Ser Pro Pro Lys Asp Lys Arg Tyr Val Gly Phe Met Ser Ser Glu Arg
 195 200 205
 Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
 210 215 220

<210> 15
 <211> 771
 <212> DNA
 <213> *Cavia porcellus*

<400> 15
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 <212> PRT
 <213> *Cavia porcellus*

<400> 16

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Gln Cys Gln Asp Leu Thr Thr Glu Arg His Leu Leu Glu Cys Leu Arg
 35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Gly
 50 55 60

Ala Asp Glu Gln Thr Pro Thr Glu Ser Pro Arg Lys Tyr Val Thr Gly
 65 70 75 80

His Phe Arg Trp Gly Arg Phe Gly Arg Gly Asn Ser Ser Gly Ala Ser
 85 90 95

Gln Lys Arg Glu Glu Glu Ala Ala Ala Asp Pro Gly Phe His Gly
 100 105 110

Asp Gly Val Glu Pro Gly Leu Arg Glu Asp Lys Arg Ser Tyr Ser Met
 115 120 125

Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val
 130 135 140

Lys Val Tyr Ala Asn Gly Ala Glu Glu Glu Ser Ala Glu Ala Phe Pro
 145 150 155 160

Leu Glu Phe Lys Arg Glu Leu Thr Gly Glu Arg Pro Ala Ala Ala Pro
 165 170 175

Gly Pro Asp Gly Leu Gly Phe Gly Leu Val Ala Glu Ala Glu Ala Glu
180 185 190

Ala Ala Ala Ala Glu Lys Lys Asp Ala Ala Glu Lys Lys Asp Asp Gly
195 200 205

Ser Tyr Arg Met Glu His Phe Arg Trp Gly Thr Pro Arg Lys Gly Lys
210 215 220

Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val
225 230 235 240

Thr Leu Phe Lys Asn Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
245 250 255

<210> 17
<211> 714
<212> DNA
<213> Rattus norvegicus

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gataccgaga aggccgacgg gccctatcgg gtggagcact tccgctgggg caaccgccc 600
aaggacaagc gctacggcgg cttcatgacc tccgagaaga gccagacgcc cctggtgacg 660
ctcttcaaga acgccatcat caagaacgcg cacaagaagg gccagtgagg gtgc 714

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<211> 235
<212> PRT
<213> Rattus norvegicus

<400> 18

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 20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
 35 40 45

Ala Cys Arg Leu Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
 50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
 85 90 95

Gly Ser Ala Gln Arg Arg Ala Glu Glu Glu Thr Ala Gly Gly Asp Gly
 100 105 110

Arg Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
 115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
 130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
 145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Gln Pro Asp Gly Leu Glu Gln
 165 170 175

Val Leu Glu Pro Asp Thr Glu Lys Ala Asp Gly Pro Tyr Arg Val Glu
 180 185 190

His Phe Arg Trp Gly Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
 195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
 210 215 220

Ala Ile Ile Lys Asn Val His Lys Lys Gly Gln
 225 230 235

<210> 19
 <211> 708
 <212> DNA
 <213> Mus musculus

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<400> 19
atgccgagat tctgctacag tgcctcaggg gccctgttgc tggccctcct gcttcagacc 60
tccatagatg tgtggagctg gtgcctggag agcagccagt gccaggacct caccacggag 120
agcaacctgc tggcttgcac ccgggcttgc aaactcgacc tctcgctgga gacgcccgtg 180
tttcttgga acggagatga acagcccctg actgaaaacc cccggaagta cgtcatgggt 240
cacttccgct gggaccgctt cggccccagg aacagcagca gtgctggcag cgcggcgcag 300
aggcgtgcgg aggaagaggc ggtgtgggga gatggcagtc cagagccgag tccacgcgag 360
ggcaagcgct cctactccat ggagcacttc cgctggggca agccggtggg caagaaacgg 420
cgccccgtga aggtgtaccc caacgttgct gagaacgagt cggcggaggc ctttccccta 480
gagttcaaga gggagctgga aggcgagcgg ccattaggct tggagcaggt cctggagtcc 540
gacgcggaga aggacgacgg gccctaccgg gtggagcact tccgctggag caacccgccc 600
aaggacaagc gttacggtgg cttcatgacc tccgagaaga gccagacgcc cctggtgacg 660
ctcttcaaga acgccatcat caagaacgcg cacaagaagg gccagtga 708

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<210> 20
<211> 235
<212> PRT
<213> Mus musculus

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<400> 20
Met Pro Arg Phe Cys Tyr Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
1          5          10          15

Leu Leu Gln Thr Ser Ile Asp Val Trp Ser Trp Cys Leu Glu Ser Ser
          20          25          30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
          35          40          45

Ala Cys Lys Leu Asp Leu Ser Leu Glu Thr Pro Val Phe Pro Gly Asn
          50          55          60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65          70          75          80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
          85          90          95

Ser Ala Ala Gln Arg Arg Ala Glu Glu Glu Ala Val Trp Gly Asp Gly
          100          105          110

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Ser Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Arg Pro Leu Gly Leu Glu Gln
165 170 175

Val Leu Glu Ser Asp Ala Glu Lys Asp Asp Gly Pro Tyr Arg Val Glu
180 185 190

His Phe Arg Trp Ser Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
210 215 220

Ala Ile Ile Lys Asn Ala His Lys Lys Gly Gln
225 230 235

<210> 21
<211> 759
<212> DNA
<213> Gallus gallus

<400> 21
atgcggggcg cgctgtgcca cagcctgccc gtggtgctgg ggctgctgct gtgtcacccc 60
accaccgcca ggggcccatg ctgggagaac agcaagtgcc aggacctggc caccgaggct 120
gggtgttttgc aggcgtgtgc caaggcatgc cgtgctgagc tgtcggccga ggcacccgtg 180
taccggggca atgggcacct gcagcccctc tcggagagca tccgcaagta cgtgatgagc 240
catttccgct ggaacaagtt cggccgtcgc aacagcagca gcggagggca caaaagggag 300
gaggtggccg gcctcgccct gcctgccgcg tcaccccacc accccgccgg ggaggaggaa 360
gatggagaag ggttggaaac agaggaaggg aagcgtcctt actccatgga gcatttccgc 420
tggggcaagc cgggtggggcg gaagaggaga cccatcaagg tgtaccccaa cggggtggac 480
gaggagtcgg ctgagagtta ccccatggag ttccggaggg agatggcgcc cgatggggac 540
cccttcggcc tctccgagga ggaggaagaa gaggaggaag aggaaggcga ggaggaaaag 600
aaggatggag gctcgtaccg catgcggcac ttccgctggc acgcgccgct gaaggacaag 660

cgctacggcg gcttcatgag cttggagcac agccagaccc cgctgatgac tctgttcaaa 720
 aacgccatcg tcaaaagcgc ctacaagaag ggtcagtga 759

<210> 22
 <211> 251
 <212> PRT
 <213> Gallus gallus

<400> 22

Met Arg Gly Ala Leu Cys His Ser Leu Pro Val Val Leu Gly Leu Leu
 1 5 10 15

Leu Cys His Pro Thr Thr Ala Ser Gly Pro Cys Trp Glu Asn Ser Lys
 20 25 30

Cys Gln Asp Leu Ala Thr Glu Ala Gly Val Leu Ala Cys Ala Lys Ala
 35 40 45

Cys Arg Ala Glu Leu Ser Ala Glu Ala Pro Val Tyr Pro Gly Asn Gly
 50 55 60

His Leu Gln Pro Leu Ser Glu Ser Ile Arg Lys Tyr Val Met Ser His
 65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Ser Ser Gly Gly His
 85 90 95

Lys Arg Glu Glu Val Ala Gly Leu Ala Leu Pro Ala Ala Ser Pro His
 100 105 110

His Pro Ala Gly Glu Glu Glu Asp Gly Glu Gly Leu Glu Arg Glu Glu
 115 120 125

Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
 130 135 140

Gly Arg Lys Arg Arg Pro Ile Lys Val Tyr Pro Asn Gly Val Asp Glu
 145 150 155 160

Glu Ser Ala Glu Ser Tyr Pro Met Glu Phe Arg Arg Glu Met Ala Pro
 165 170 175

Asp Gly Asp Pro Phe Gly Leu Ser Glu Glu Glu Glu Glu Glu Glu
 180 185 190

Glu Glu Gly Glu Glu Glu Lys Lys Asp Gly Gly Ser Tyr Arg Met Arg

195

200

205

His Phe Arg Trp His Ala Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe
 210 215 220

Met Ser Leu Glu His Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn
 225 230 235 240

Ala Ile Val Lys Ser Ala Tyr Lys Lys Gly Gln
 245 250

<210> 23

<211> 780

<212> DNA

<213> Bufo marinus

<400> 23

atgttgcagc caggggtggag atgtatcctg acaataactcg gggcgtttat atttcatgtc 60

ggtagaggtca agagtcagtg ctgggagagc ggtaaagtgt cagatctgac gagcgaggat 120

gggatactgg aatgtattaa agactgcaag atgggtcctgt ctgcagagtc accagtgttt 180

cctgggaatg gacacatgca acccctctct gaaaacatca ggaagtatgt catgagccac 240

ttccgctgga ataagtttgg ccgaaggaat agcaccggtg gcgatagcaa caacgcaggt 300

tacaaacggg aagatatagc caactacccc atatttaacc tgttccccac taatgacaac 360

caaaacacac aagatggcaa catggaagaa gaactacgca ggcaagacaa caagaggtca 420

tattctatgg aacacttccg atggggtaaa ccagtcggga aaaaaaggag acctattaag 480

gttttcccaa gcgatgctga agaagaatca tctgaaatct sccaacaga gtacagaaga 540

gagttgtctg tagagtttga ctaccccgat accaactctg aagaagacat ggacgacagc 600

atgttgatgg aaagcccaaa tagaaaagat cggaagtata aaatgcatca ttttcgatgg 660

gaaggtccac ccaaagacaa aagatatgga ggattcatga cccctgagcg cagtcagact 720

ccactaatga ctcttttcaa aaatgccatt atcaaaaatg cccacaagaa ggggtcaataa 780

<210> 24

<211> 259

<212> PRT

<213> Bufo marinus

<220>

<221> misc_feature

<222> (174)..(174)

<223> Xaa can be any naturally occurring amino acid

<400> 24

Met Leu Gln Pro Gly Trp Arg Cys Ile Leu Thr Ile Leu Gly Ala Phe
 1 5 10 15
 Ile Phe His Val Gly Glu Val Lys Ser Gln Cys Trp Glu Ser Gly Lys
 20 25 30
 Cys Ala Asp Leu Thr Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Asp
 35 40 45
 Cys Lys Met Val Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
 50 55 60
 His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
 65 70 75 80
 Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Gly Asp Ser
 85 90 95
 Asn Asn Ala Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe
 100 105 110
 Asn Leu Phe Pro Thr Asn Asp Asn Gln Asn Thr Gln Asp Gly Asn Met
 115 120 125
 Glu Glu Glu Leu Arg Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu
 130 135 140
 His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Ile Lys
 145 150 155 160
 Val Phe Pro Ser Asp Ala Glu Glu Glu Ser Ser Glu Ile Xaa Pro Thr
 165 170 175
 Glu Tyr Arg Arg Glu Leu Ser Val Glu Phe Asp Tyr Pro Asp Thr Asn
 180 185 190
 Ser Glu Glu Asp Met Asp Asp Ser Met Leu Met Glu Ser Pro Asn Arg
 195 200 205
 Lys Asp Arg Lys Tyr Lys Met His His Phe Arg Trp Glu Gly Pro Pro
 210 215 220
 Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
 225 230 235 240
 Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys

245

250

255

Lys Gly Gln

<210> 25
 <211> 669
 <212> DNA
 <213> *Cyprinus carpio*

<400> 25
 atggtgaggg gagagaggat gttgtgtcct gcttggtctt tggctctggc tgttctgtgt 60
 gcggctggat ctgaagtcag agctcagtgt atggaggacg cccgctgcag agacctcacc 120
 actgatgaga acatcttggg ctgcatacag ctatgcaggt ctgatctgac agatgaaacc 180
 cccgtctacc ctggagaaaag ccatttgcag cctccctctg agctggagca aaccgaggtc 240
 ctctgacccc tgtccccagc ggcctctgct cctgctgagc aaatggaccc cgagtccagc 300
 cctcagcacg agcacaagcg ctctactcc atggagcatt tccgctgggg aaagccagtg 360
 ggtcgcaagc gcaggcctat caaggtgtac accaacggcg tggaggagga atccaccgag 420
 actctcccag ctgagatgag gcgagagctg gctacaaacg agatcgacta tcctcaagag 480
 gagggcgctt taaaccagca ggataagaag gatggctcct acaaaatgag ccatttccgc 540
 tggagcagcc cgctgctag caagcgctat ggaggcttca tgaagtctg ggacgagcgc 600
 agtcagaaac cccttctcac gctcttcaaa aacgtcataa acaaagagca ccagaagaag 660
 gaccagtga 669

<210> 26
 <211> 222
 <212> PRT
 <213> *Cyprinus carpio*

<400> 26
 Met Val Arg Gly Glu Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
 1 5 10 15
 Ala Val Leu Cys Ala Ala Gly Ser Glu Val Arg Ala Gln Cys Met Glu
 20 25 30
 Asp Ala Arg Cys Arg Asp Leu Thr Thr Asp Glu Asn Ile Leu Asp Cys
 35 40 45
 Ile Gln Leu Cys Arg Ser Asp Leu Thr Asp Glu Thr Pro Val Tyr Pro
 50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Leu Glu Gln Thr Glu Val
65 70 75 80

Leu Val Pro Leu Ser Pro Ala Ala Leu Ala Pro Ala Glu Gln Met Asp
85 90 95

Pro Glu Ser Ser Pro Gln His Glu His Lys Arg Ser Tyr Ser Met Glu
100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Glu Ser Thr Glu Thr Leu Pro Ala
130 135 140

Glu Met Arg Arg Glu Leu Ala Thr Asn Glu Ile Asp Tyr Pro Gln Glu
145 150 155 160

Glu Gly Ala Leu Asn Gln Gln Asp Lys Lys Asp Gly Ser Tyr Lys Met
165 170 175

Ser His Phe Arg Trp Ser Ser Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ser Gln Lys Pro Leu Leu Thr Leu
195 200 205

Phe Lys Asn Val Ile Asn Lys Glu His Gln Lys Lys Asp Gln
210 215 220

<210> 27
<211> 669
<212> DNA
<213> Danio rerio

<400> 27
atggtgaggg gagtgaggat gttgtgtcct gcttggtctt tggtctctggc tgttctctgc 60
gcaggaggat ctgaagtcag agctcagtg tgggaaaatg cccgctgtcg agacctcagc 120
acagaggaga acatcttgga atgcatacaa ttatgcaggt ctgaacttac agatgaaacc 180
cccgtctacc ctggagaaaag ccatctacag cctccctccg agccggagca aatcgacctc 240
ctcgcacacc tttcccctgt agcactcgca gccctgaac agatagagcc ggagtccggc 300
cctcgacacg accacaagcg ctctactcc atggaacact tccggtgggg caaaccggtc 360
ggccgcaaac gcagacccat caaggtgtac acgaacggcg tggaagagga atccgccgaa 420
acgcttccgg aagagatgag acgcgagctg gcaaataacg aggtcgacta tccgcaagaa 480

gagatgcctt taaacccact gggaaagaag gacccccctt acaaaatgac ccatttccgc 540
 tggagcgctcc cgccggctag caagcgctat ggaggcttca tgaagtcctg ggacgagcgt 600
 gctcagaaac cactgctcac actcttcaaa aacgtaatgc ataaaggcca accgaggaag 660
 gatgagtga 669

<210> 28
 <211> 222
 <212> PRT
 <213> Danio rerio

<400> 28

Met Val Arg Gly Val Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
 1 5 10 15

Ala Val Leu Cys Ala Gly Gly Ser Glu Val Arg Ala Gln Cys Trp Glu
 20 25 30

Asn Ala Arg Cys Arg Asp Leu Ser Thr Glu Glu Asn Ile Leu Glu Cys
 35 40 45

Ile Gln Leu Cys Arg Ser Glu Leu Thr Asp Glu Thr Pro Val Tyr Pro
 50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Pro Glu Gln Ile Asp Leu
 65 70 75 80

Leu Ala His Leu Ser Pro Val Ala Leu Ala Ala Pro Glu Gln Ile Glu
 85 90 95

Pro Glu Ser Gly Pro Arg His Asp His Lys Arg Ser Tyr Ser Met Glu
 100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
 115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Glu Ser Ala Glu Thr Leu Pro Glu
 130 135 140

Glu Met Arg Arg Glu Leu Ala Asn Asn Glu Val Asp Tyr Pro Gln Glu
 145 150 155 160

Glu Met Pro Leu Asn Pro Leu Gly Lys Lys Asp Pro Pro Tyr Lys Met
 165 170 175

Thr His Phe Arg Trp Ser Val Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ala Gln Lys Pro Leu Leu Thr Leu
195 200 205

Phe Lys Asn Val Met His Lys Gly Gln Pro Arg Lys Asp Glu
210 215 220

<210> 29
<211> 792
<212> DNA
<213> Rana catesbeiana

<400> 29
atgttgccagc cagtctggca cgcctgtatc ctggcaatac ttgggggtggt catatttcat 60
gtcggagagg tccggagcca gtgctgggaa agcaataagt gtacagattt aagcagcgaa 120
gatggcattc tggaatgtat caaagcatgc aagatggacc tctctgcaga atctcccgtg 180
tttcccggca atggccacat ccagcccctt tctgaaaaca tcaggaaata tgtcatgagc 240
cacttttcgct ggaataaatt tggtagaagg aacagcacca gcaatgacaa caacaacaac 300
aatggtggct ataagcggga ggatattgcc aactacccta tattgaacct gttccttggc 360
agcgacaacc aaaacacaca ggagggaatt atggaagatg acgccttgga taggcaagac 420
agcaaaagggt cttattccat ggagcacttc cgatggggaa aaccgcgtcg caagaagagg 480
aggcctatca aagttttccc cacagatgct gaagaagagt cctcagaaag tttccccatt 540
gagctgagaa gagagctctc tctagagttt gactatcctg acaccaactc cgaagaagaa 600
ttggataatg gcgagctgct agaaggtcca gttaaaaaag gtaggaagta caaaatgcac 660
catttccgat ggggaaggacc tcccaaagac aagcggtatg gtggatttat gaccccagag 720
agaagccaga cacctttaat gactcttttc aagaatgcta taattaagaa cgcccacaaa 780
aagggccagt ag 792

<210> 30
<211> 263
<212> PRT
<213> Rana catesbeiana

<400> 30

Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
1 5 10 15

Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
20 25 30

Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
 35 40 45
 Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
 50 55 60
 Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
 65 70 75 80
 His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
 85 90 95
 Asn Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr
 100 105 110
 Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
 115 120 125
 Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
 130 135 140
 Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
 145 150 155 160
 Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Glu Ser Ser Glu
 165 170 175
 Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
 180 185 190
 Pro Asp Thr Asn Ser Glu Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
 195 200 205
 Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
 210 215 220
 Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
 225 230 235 240
 Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
 245 250 255
 Asn Ala His Lys Lys Gly Gln
 260

<210> 31
 <211> 272
 <212> PRT
 <213> Monodelphis domestica

<400> 31

Met Pro Lys Pro Ser Trp Ser Tyr Leu Gly Ala Leu Leu Val Ala Val
 1 5 10 15

Leu Phe Gln Ala Ser Val Glu Val His Gly Trp Cys Leu Gln Ala Ser
 20 25 30

Asn Cys Arg Asp Ser Lys Ala Glu Asp Gly Leu Val Glu Cys Ile Lys
 35 40 45

Ser Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
 50 55 60

Gly Gln Tyr Glu Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
 65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ile Ser Ser Gly Ser
 85 90 95

Ile Ser Ser Asp Gly Gly Asn Val Gly Gln Lys Arg Gln Glu Leu Met
 100 105 110

Gln Gly Asp Phe Leu Asp Leu Pro Pro Pro Gly Val Trp Gly Glu Asp
 115 120 125

Glu Glu Met Gln Glu Gly Leu Pro Leu Ile Arg Lys Ala Arg Glu Leu
 130 135 140

Gln Asn Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
 145 150 155 160

Val Gly Lys Lys Arg Arg Pro Val Lys Ile Tyr Pro Asn Gly Val Glu
 165 170 175

Glu Glu Ser Ala Glu Ser Tyr Pro Val Glu Ile Arg Arg Asp Leu Pro
 180 185 190

Met Lys Ile Asn Phe Pro Glu Tyr Pro Glu Leu Ala Ile Asp Glu Glu
 195 200 205

Glu Ala Ala Lys Glu Val Tyr Glu Glu Lys Val Lys Lys Asp Gly Gly
 210 215 220

Gly Tyr Lys Met Glu His Phe Arg Trp Gly Thr Pro Pro Lys Asp Lys
 225 230 235 240

Arg Tyr Gly Gly Phe Met Ile Ser Glu Lys Ser His Thr Pro Leu Met
 245 250 255

Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Gly His Lys Lys Gly Gln
 260 265 270

<210> 32
 <211> 263
 <212> PRT
 <213> Ovis aries

<220>
 <221> misc_feature
 <222> (184)..(184)
 <223> Xaa can be any naturally occurring amino acid
 <400> 32

Met Pro Arg Leu Cys Ser Ser Arg Ser Gly Ala Leu Leu Leu Val Leu
 1 5 10 15

Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
 20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
 35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
 50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe
 85 90 95

Gly Ala Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
 100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu
 115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
 130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
 145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
 165 170 175

Glu Arg Leu Glu Gln Ala Arg Xaa Pro Glu Ala Gln Ala Glu Ser Ala
 180 185 190

Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
 195 200 205

Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp
 210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu
 225 230 235 240

Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys
 245 250 255

Asn Ala His Lys Lys Gly Gln
 260

<210> 33
 <211> 212
 <212> PRT
 <213> Ovis aries

<220>
 <221> misc_feature
 <222> (120)..(121)
 <223> Xaa can be any naturally occurring amino acid

<400> 33

Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn Cys Asp Glu
 1 5 10 15

Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
 20 25 30

Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe Gly Ala Gly
 35 40 45

Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly Glu Gly Pro
 50 55 60

Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu Asp Lys Arg
65 70 75 80

Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys
85 90 95

Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala
100 105 110

Gln Ala Phe Pro Leu Glu Phe Xaa Xaa Glu Leu Thr Gly Glu Arg Leu
115 120 125

Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala Ala Ala Arg
130 135 140

Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala Ala Glu Lys
145 150 155 160

Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly Ser Pro
165 170 175

Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln
180 185 190

Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His
195 200 205

Lys Lys Gly Gln
210

<210> 34
<211> 263
<212> PRT
<213> Rana catesbeiana

<400> 34

Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
1 5 10 15

Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
20 25 30

Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
 50 55 60

Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
 65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
 85 90 95

Asn Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr
 100 105 110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
 115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
 130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
 145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Glu Ser Ser Glu
 165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
 180 185 190

Pro Asp Thr Asn Ser Glu Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
 195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
 210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
 225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
 245 250 255

Asn Ala His Lys Lys Gly Gln
 260

<210> 35
 <211> 258
 <212> PRT
 <213> Spea multiplicata

<400> 35

Met Leu Cys Pro Val Trp Ser Cys Leu Phe Ala Val Leu Gly Val Phe
1 5 10 15

Val Phe His Val Gly Glu Val Arg Gly Gln Cys Trp Gln Ser Ala Lys
20 25 30

Cys Met Asp Leu Glu Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Ile Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ala Glu Asn Val Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Thr Thr Gly Asn Glu Gly
85 90 95

Asn Ser Gly Ser Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe Asn
100 105 110

Leu Phe Pro Ser Ser Asn Gly Gln Asn Thr Glu Asp Asn Met Trp Lys
115 120 125

Lys Tyr Gln Asp Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Phe Pro Asn Gly Met Glu Glu Glu Ser Ser Glu Ser Tyr Pro Met Glu
165 170 175

Leu Arg Arg Glu Leu Ser Leu Glu Asp Asp Tyr Pro Glu Ile Asp Ser
180 185 190

Glu Asp Asp Leu Asp Tyr Asn Asp Leu Leu Ser Met Pro Lys Phe Lys
195 200 205

Gly Gly Asp Tyr Arg Ile His His Phe Arg Trp Gly Ser Pro Pro Lys
210 215 220

Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr Pro
225 230 235 240

Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys Lys
245 250 255

Ala Gln

<210> 36
<211> 259
<212> PRT
<213> *Xenopus laevis*

<400> 36

Met Phe Arg Pro Leu Trp Gly Cys Phe Leu Ala Ile Leu Gly Ile Cys
1 5 10 15

Ile Phe His Ile Gly Glu Val Gln Ser Gln Cys Trp Glu Ser Ser Arg
20 25 30

Cys Ala Asp Leu Ser Ser Glu Asp Gly Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ser Glu Ser Ile Arg Lys Tyr Val Met Thr His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Asn Asp Gly
85 90 95

Ser Asn Thr Gly Tyr Lys Arg Glu Asp Ile Ser Ser Tyr Pro Val Phe
100 105 110

Ser Leu Phe Pro Leu Ser Asp Gln Asn Ala Pro Gly Asp Asn Met Glu
115 120 125

Glu Glu Pro Leu Asp Arg Gln Glu Asn Lys Arg Ala Tyr Ser Met Glu
130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
145 150 155 160

Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ala Glu Ser Tyr Pro Met
165 170 175

Glu Leu Arg Arg Glu Leu Ser Leu Glu Leu Asp Tyr Pro Glu Ile Asp

180	185	190
Leu Asp Glu Asp Ile Glu Asp Asn Glu Val Lys Ser Ala Leu Thr Lys		
195	200	205
Lys Asn Gly Asn Tyr Arg Met His His Phe Arg Trp Gly Ser Pro Pro		
210	215	220
Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr		
225	230	235
Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ser His Lys		
245	250	255

Lys Gly Gln

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 <213> Necturus maculosus

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 <223> Xaa can be any naturally occurring amino acid
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1 5 10 15
Leu Cys Gln Thr Val Val Ala His Ser Gln Cys Trp Glu Ser Ser Lys
20 25 30
Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45
Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60
His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80
Phe Arg Trp Asn Gln Phe Gly Arg Lys Asn Ser Thr Val Ala Ser Gly
85 90 95
Asn Gly Ala Gly Ser Lys Arg Glu Glu Leu Ser Gly Asn Pro Ile Ile

100	105	110
Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala His Asp Ser		
115	120	125
Xaa Lys Glu Gly Glu Val Met Asp Arg Gln Asp Asn Lys Arg Ser Tyr		
130	135	140
Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg		
145	150	155
Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ser Glu Ser		
165	170	175
Tyr Pro Leu Glu Leu Lys Arg Asp Leu Ser Leu Gly Leu Glu Tyr Pro		
180	185	190
Glu Phe Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Val Met Val Val		
195	200	205
Leu Pro Glu Lys Lys Asp Gly Asn Tyr Arg Met His His Phe Arg Trp		
210	215	220
Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu		
225	230	235
Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn		
245	250	255
Ala His Lys Lys Gly Gln		
260		

<210> 38
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<400> 38

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Leu Cys Gln Thr Ala Gly Ala Asn Ser Gln Cys Trp Glu Ser Ser Lys		
20	25	30
Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala		
35	40	45

Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Thr Ser Val Ser Gly
85 90 95

Asn Ser Ala Gly Asn Lys Arg Glu Glu Leu Ser Asn Asn Pro Ile Ile
100 105 110

Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala Asp Asp Gly
115 120 125

Asn Lys Glu Gly Glu Ala Met Glu Arg Gln Asp Ser Lys Arg Ser Tyr
130 135 140

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg
145 150 155 160

Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ser Glu Ser
165 170 175

Tyr Pro Leu Glu Leu Arg Arg Asp Leu Ser Leu Gly Leu Asp Tyr Pro
180 185 190

Asp Ser Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Ile Thr Thr Gly
195 200 205

Leu Thr Lys Lys Asn Asp Lys Gln Tyr Arg Ile Gly His Phe Arg Trp
210 215 220

Gly Ser Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn
245 250 255

Ala His Lys Lys Gly Gln
260

<210> 39
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<400> 39

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1 5 10 15

Leu Phe His Ala Asp Gly Gly Val His Ser Gln Cys Trp Asp Ser Ser
20 25 30

Arg Cys Arg Glu Leu Ser Thr Asp Ala Gly Leu Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Asp Glu Ser Pro Met Tyr Pro Gly Asn
50 55 60

Gly His Leu Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Ser Ser Ser Val
85 90 95

Ala Gly His Lys Arg Glu Glu Ile Pro Ser His Leu Leu Leu Gly Leu
100 105 110

Phe Pro Asp Val Ala Pro Ala Gln Arg Gly Asp Asp Gly Glu Gly Gly
115 120 125

Ala Ala Leu Glu Arg Gln Asp Ser Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Tyr Pro Ser Glu Val Glu Glu Glu Ser Ala Glu Ser Tyr Pro Pro Glu
165 170 175

Phe Arg Arg Asp Leu Ser Met Glu Leu Asp Tyr Pro Glu Phe Glu Ser
180 185 190

Leu Glu Asp Pro Glu Ser Glu Glu Ala Leu Val Ser Glu Glu Ala Glu
195 200 205

Lys Lys Asp Gly Asn Ser Tyr Lys Met His His Phe Arg Trp Asn Ala
210 215 220

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Ser Ser
225 230 235 240

Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala
 245 250 255

Tyr Lys Lys Gly Gln
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<210> 40
 <211> 187
 <212> PRT
 <213> Pan troglodytes

<400> 40

Ser Ala Glu Thr Pro Met Phe Pro Gly Asn Gly Asp Glu Gln Pro Leu
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Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
 20 25 30

Phe Gly Arg Arg Asn Ser Ser Ser Ser Ser Ser Gly Ser Gly Ala Gly
 35 40 45

Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro
 50 55 60

Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg
 65 70 75 80

Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
 85 90 95

Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu
 100 105 110

Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr
 115 120 125

Gly Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp
 130 135 140

Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala
 145 150 155 160

Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg Trp Gly
 165 170 175

Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

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<210> 43
<211> 22
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<210> 44
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SEQUENCE LISTING

<110> SCARPACE, PHILIP J.
LI, GANG

<120> RAAV VECTOR-BASED PRO-OPIOMELANOCORTIN COMPOSITIONS AND METHODS
OF USE

<130> 4300.015400

<150> 60/462,496
<151> 2003-04-11

<160> 54

<170> PatentIn version 3.2

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<213> Homo sapiens

<400> 2

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20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Met Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Ser Ser Ser Ser Gly
85 90 95

Ser Ser Gly Ala Gly Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp
100 105 110

Cys Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala
115 120 125

Lys Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe
130 135 140

Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr
145 150 155 160

Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe
165 170 175

Lys Arg Glu Leu Thr Gly Gln Arg Leu Arg Glu Gly Asp Gly Pro Asp
180 185 190

Gly Pro Ala Asp Asp Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser
195 200 205

Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu
210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
 225 230 235 240

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
 245 250 255

Ala Ile Ile Lys Asn Ala Tyr Lys Lys Gly Glu
 260 265

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 <213> Gorilla gorilla

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 gcgcccgggtg aaggtgtacc ctaacggcgc cgaggacgag tcggccgagg ccttccccct 360
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 caagcgctac ggcgggttc 559

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 <212> PRT
 <213> Gorilla gorilla

<400> 4

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Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
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Phe Gly Arg Arg Asn Ser Ser Ser Ser Gly Ser Gly Ala Gly Gln
 35 40 45

Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu
50 55 60

Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg Glu
65 70 75 80

Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
85 90 95

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
100 105 110

Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
115 120 125

Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly
130 135 140

Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala Glu
145 150 155 160

Lys Lys Asp Glu Gly Pro Tyr Gly Met Glu His Phe Arg Trp Gly Ser
165 170 175

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
180 185

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<211> 795
<212> DNA
<213> Macaca nemestrina

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agcaacctgc tggagtgcac ccgggcctgc aagcccgaacc ttccggccga gactccggtg 180
tttccgggca atggcgacga gcagcctctg accgagaacc cccggaagta cgtcatgggc 240
cacttccgct gggaccgatt cggccgccc aacagtagca gcggcagcgc gcaccagaag 300
cgcgaggacg tcgcggctgg cgaagaccgc ggccctgctac ctgagggtgg ccccgagccc 360
cgtggcgatg gcgccggggc gggcccgcgc gagggcaagc gctcctactc catggagcac 420

ttccgctggg gcaagccggt gggcaagaag cggcgccccg tgaaggtgta ccccaatggc	480
gccgaggacg agtcggccga ggccttcccc ctggagttca agaggagct gaccggccag	540
cggccccggg cgggggatgg ccccgatggc cctgccgacg acggcgcggg gccccgggcc	600
gacctggagc acagcctgct ggtggcggcc gagaagaagg atgagggcc ctacaggatg	660
gagcacttcc gctggggcag cccgcccag gacaagcgt acggcggtt catgacctcc	720
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aagaagggcc agtga	795

<210> 6
 <211> 264
 <212> PRT
 <213> Macaca nemestrina

<400> 6

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		20						25					30		

Gln	Cys	Gln	Asp	Leu	Thr	Thr	Glu	Ser	Asn	Leu	Leu	Glu	Cys	Ile	Arg
	35						40					45			

Ala	Cys	Lys	Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Asn
	50					55					60				

Gly	Asp	Glu	Gln	Pro	Leu	Thr	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly
65					70					75					80

His	Phe	Arg	Trp	Asp	Arg	Phe	Gly	Arg	Arg	Asn	Ser	Ser	Ser	Gly	Ser
				85					90					95	

Ala	His	Gln	Lys	Arg	Glu	Asp	Val	Ala	Ala	Gly	Glu	Asp	Arg	Gly	Leu
			100					105					110		

Leu	Pro	Glu	Gly	Gly	Pro	Glu	Pro	Arg	Gly	Asp	Gly	Ala	Gly	Pro	Gly
		115					120					125			

Pro	Arg	Glu	Gly	Lys	Arg	Ser	Tyr	Ser	Met	Glu	His	Phe	Arg	Trp	Gly
	130					135					140				

Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly
 145 150 155 160

Ala Glu Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu
 165 170 175

Leu Thr Gly Gln Arg Pro Arg Ala Gly Asp Gly Pro Asp Gly Pro Ala
 180 185 190

Asp Asp Gly Ala Gly Pro Arg Ala Asp Leu Glu His Ser Leu Leu Val
 195 200 205

Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg
 210 215 220

Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser
 225 230 235 240

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 245 250 255

Lys Asn Ala Tyr Lys Lys Gly Gln
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 <213> Pongo pygmaeus

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 actgcctgag ggcggccccg agccccgcag cgatggcgcc gagccgggccc cgcgcgaggg 180
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<212> PRT
<213> Pongo pygmaeus

<400> 8

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Ala Ala Gly Glu Asp Arg Gly Pro Leu Pro Glu Gly Gly Pro Glu Pro
35 40 45

Arg Ser Asp Gly Ala Glu Pro Gly Pro Arg Glu Gly Lys Arg Ser Tyr
50 55 60

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg
65 70 75 80

Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala Glu Ala
85 90 95

Phe Pro Leu Glu Phe Lys Arg Glu Pro Thr Gly Gln Arg Leu Arg Glu
100 105 110

Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp Gly Ala Gly Ala Arg Ala
115 120 125

Asp Leu Glu His Asn Leu Leu Val Ala Ala Glu Lys Lys Asp Glu Gly
130 135 140

Pro Tyr Arg Met Glu His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys
145 150 155 160

Arg Tyr Gly Gly Phe
165

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<211> 804
<212> DNA
<213> Sus scroffa

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agtaacttgt tggcgtgcat ccgggcctgc aaaccagatc tctctgcgga gacgcccgtg 180
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<211> 267
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<213> Sus scroffa

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35 40 45
Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60
Gly Asp Ala Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Gly
85 90 95

Gly Gly Gly Gly Gly Gly Gly Ala Gly Gln Lys Arg Glu Glu Glu Glu
100 105 110

Val Ala Ala Gly Glu Gly Pro Gly Pro Arg Gly Asp Gly Val Ala Pro
115 120 125

Gly Pro Arg Gln Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp
130 135 140

Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn
145 150 155 160

Gly Ala Glu Asp Glu Leu Ala Glu Ala Phe Pro Leu Glu Phe Arg Arg
165 170 175

Glu Leu Ala Gly Ala Pro Pro Glu Pro Ala Arg Asp Pro Glu Ala Pro
180 185 190

Ala Glu Gly Ala Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala
195 200 205

Glu Ala Glu Ala Ala Glu Lys Lys Asp Glu Gly Pro Tyr Lys Met Glu
210 215 220

His Phe Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
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Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
260 265

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<212> DNA
<213> Bos taurus

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agtaacctgc tggcgtgcat ccgggcctgc aagcccgaacc tctccgccga gacgccggtg	180
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gacgccgaga cgggtccgcg cgaggacaag cgttcttact ccatggaaca cttcccctgg	420
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gagtcggccc aggcctttcc cctcgaattc aagagggagc tgaccgggga gaggctcgag	540
caggcgcgcg gccccgaggc ccaggctgag agtgcggccg cccggcctga gctggagtat	600
ggcctggttg cggaggcgga ggctgaggcg gccgagaaga aggactcggg gccctataag	660
atggaacact tccgctgggg cagcccgccc aaggacaagc gctacggcgg gttcatgacc	720
tccgagaaga gccaaacgcc ccttgtcacg ctgttcaaaa acgccatcat caagaacgcc	780
cacaagaagg gccagtga	798

<210> 12
 <211> 265
 <212> PRT
 <213> Bos taurus

<400> 12

Met	Pro	Arg	Leu	Cys	Ser	Ser	Arg	Ser	Ala	Ala	Leu	Leu	Leu	Ala	Leu
1				5					10					15	

Leu	Leu	Gln	Ala	Ser	Met	Glu	Val	Arg	Gly	Trp	Cys	Leu	Glu	Ser	Ser
			20					25					30		

Gln	Cys	Gln	Asp	Leu	Thr	Thr	Glu	Ser	Asn	Leu	Leu	Ala	Cys	Ile	Arg
		35					40					45			

Ala	Cys	Lys	Pro	Asp	Leu	Ser	Ala	Glu	Thr	Pro	Val	Phe	Pro	Gly	Asn
	50					55					60				

Gly	Asp	Glu	Gln	Pro	Leu	Thr	Glu	Asn	Pro	Arg	Lys	Tyr	Val	Met	Gly
65					70					75				80	

His	Phe	Arg	Trp	Asp	Arg	Phe	Gly	Arg	Arg	Asn	Gly	Ser	Ser	Ser	Ser
				85						90				95	

Gly Val Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Asp Ala Glu Thr Gly Pro Arg Glu
115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Pro Trp Gly Lys Pro Val
130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
165 170 175

Glu Arg Leu Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala
180 185 190

Ala Ala Arg Pro Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
195 200 205

Glu Ala Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe
210 215 220

Arg Trp Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr
225 230 235 240

Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
245 250 255

Ile Lys Asn Ala His Lys Lys Gly Gln
260 265

<210> 13
<211> 663
<212> DNA
<213> Canis familiaris

<400> 13
gacctcacca cggaaagtaa cctgctggcg tgcattccggg cctgcaagcc cgacctctcc 60
gccgagacgc ccgtgctccc cggcaacggc gacgagcagc cgctggctga gaacccccgg 120
aagtacgtca tgggccactt ccgctgggac cggtttggcc gccgcaatgg cagcgcgggc 180

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cagaagcgcg aggaagaaga ggtggcgggc ggcgagggcc gcgccccgct gcccgcgggc 240
ggccccggggc cccgcggcga cggtggcgag ctccggcctgc aagagggcaa gcgctcctac 300
tccatggagc acttccgctg gggcaagccg gtgggcaaga agcggcgccc ggtgaaggtg 360
taccccaacg gcgctgagga cgagtcggcc gaggccttcc ccgtcgagtt caagagggag 420
ctggccgggc agcggctgga gccggcgctc ggccccgagg gcccggccgc gggcgtggcg 480
gcgctggccg acctggagta cggcctgggtg gcggaggccg gggcgggcca gaagaaggac 540
gacggggccct acaagatgga gcacttccgc tggggcagcc cgccaagga caagcgctac 600
gtcggcttca tgagctcgga gaggagccag acgcccctgg tgacgctggt caaaaacgcc 660
atc 663

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<210> 14
<211> 221
<212> PRT
<213> Canis familiaris

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<400> 14

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Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg Ala Cys Lys
1          5          10          15

```

```

Pro Asp Leu Ser Ala Glu Thr Pro Val Leu Pro Gly Asn Gly Asp Glu
          20          25          30

```

```

Gln Pro Leu Ala Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
          35          40          45

```

```

Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ala Gly Gln Lys Arg Glu
          50          55          60

```

```

Glu Glu Glu Val Ala Ala Gly Gly Gly Arg Ala Pro Leu Pro Ala Gly
65          70          75          80

```

```

Gly Pro Gly Pro Arg Gly Asp Gly Gly Glu Leu Gly Leu Gln Glu Gly
          85          90          95

```

```

Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly
          100          105          110

```

```

Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu
          115          120          125

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Ser Ala Glu Ala Phe Pro Val Glu Phe Lys Arg Glu Leu Ala Gly Gln
 130 135 140

Arg Leu Glu Pro Ala Leu Gly Pro Glu Gly Pro Ala Ala Gly Val Ala
 145 150 155 160

Ala Leu Ala Asp Leu Glu Tyr Gly Leu Val Ala Glu Ala Gly Ala Ala
 165 170 175

Glu Lys Lys Asp Asp Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly
 180 185 190

Ser Pro Pro Lys Asp Lys Arg Tyr Val Gly Phe Met Ser Ser Glu Arg
 195 200 205

Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile
 210 215 220

<210> 15
 <211> 771
 <212> DNA
 <213> Cavia porcellus

<400> 15
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 tccatggaag tgcggggctg gtgcctggag agcagccagt gtcaggacct caccacggag 120
 agacacctgc tggagtgcct ccgggctgc aaaccggacc tctcggccga gacgccagt 180
 tttccggggg gcgccgacga gcagacgccg accgagagcc cccggaagta cgtcacgggc 240
 cacttccgct ggggccgctt cggccgcggt aacagcagcg gcgcgagcca gaagcgtgag 300
 gaggaggcgg cggcgggccga ccccggttc cacggcgatg gcgtcgagcc gggcctgcgc 360
 gaggacaagc gctcctactc catggagcac ttccgctggg gcaagccggt gggcaagaag 420
 cggcgcccgg tgaagggtgta cgcgaacggc gcggaggagg agtcggccga ggcctttccg 480
 cttgagttca agcgggagct gaccggggag cggcccgcgg cggcgcccgg ccccgacggc 540
 ctgggggttcg gcctggtggc tgaggccgag gccgaggcgg cagcggccga gaagaaggac 600
 gcggccgaga agaaggacga cgggtcctat cgcattggagc acttccgctg gggcaccctg 660
 cgcaagggca agcgtctacg cggcttcatt acctcggaga agagccagac gccgctggtg 720
 acgctgttca agaacgccat cgtcaagaac gccacaaga agggccagtg a 771

<210> 16
<211> 256
<212> PRT
<213> Cavia porcellus

<400> 16

Met Pro Arg Ser Cys Tyr Ser Arg Ser Gly Thr Leu Leu Leu Ala Leu
1 5 10 15

Leu Leu Gln Ile Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Arg His Leu Leu Glu Cys Leu Arg
35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Gly
50 55 60

Ala Asp Glu Gln Thr Pro Thr Glu Ser Pro Arg Lys Tyr Val Thr Gly
65 70 75 80

His Phe Arg Trp Gly Arg Phe Gly Arg Gly Asn Ser Ser Gly Ala Ser
85 90 95

Gln Lys Arg Glu Glu Glu Ala Ala Ala Ala Asp Pro Gly Phe His Gly
100 105 110

Asp Gly Val Glu Pro Gly Leu Arg Glu Asp Lys Arg Ser Tyr Ser Met
115 120 125

Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val
130 135 140

Lys Val Tyr Ala Asn Gly Ala Glu Glu Glu Ser Ala Glu Ala Phe Pro
145 150 155 160

Leu Glu Phe Lys Arg Glu Leu Thr Gly Glu Arg Pro Ala Ala Ala Pro
165 170 175

Gly Pro Asp Gly Leu Gly Phe Gly Leu Val Ala Glu Ala Glu Ala Glu
180 185 190

Ala Ala Ala Ala Glu Lys Lys Asp Ala Ala Glu Lys Lys Asp Asp Gly

195

200

205

Ser Tyr Arg Met Glu His Phe Arg Trp Gly Thr Pro Arg Lys Gly Lys
 210 215 220

Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val
 225 230 235 240

Thr Leu Phe Lys Asn Ala Ile Val Lys Asn Ala His Lys Lys Gly Gln
 245 250 255

<210> 17

<211> 714

<212> DNA

<213> Rattus norvegicus

<400> 17

atgccgagat tctgctacag tcgctcaggg gccctgctgc tggccctcct gcttcagacc 60
 tccatagacg tgtggagctg gtgcctggag agcagccagt gccaggacct caccacggaa 120
 agcaacctgc tggcttgcac ccgggcctgc agactcgacc tctcggcgga gacgcccgtg 180
 tttccaggca acggagatga acagcccttg actgaaaatc cccggaagta cgtcatgggt 240
 cacttccgct gggaccgctt cggcccgaga aacagcagca gtgctggcgg ctacagcgag 300
 aggcgtgcgg aggaagagac ggcgggggga gatggccgtc cggagccaag tccacgggag 360
 ggcaagcgct cctactccat ggagcacttc cgctggggca agccggtggg caagaagcgg 420
 cgccctgtga aggtgtaccc caatgtcgcc gagaacgagt cggccgaggc ctttccccta 480
 gagttcaaga gggagctgga aggcgagcag cctgatggct tggagcacgt cctggagccg 540
 gataccgaga aggccgacgg gccctatcgg gtggagcact tccgctgggg caaccgccc 600
 aaggacaagc gctacggcgg cttcatgacc tccgagaaga gccagacgcc cctggtgacg 660
 ctcttcaaga acgcatcat caagaacgcg cacaagaagg gccagtgagg gtgc 714

<210> 18

<211> 235

<212> PRT

<213> Rattus norvegicus

<400> 18

Met Pro Arg Phe Cys Tyr Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
 1 5 10 15

Leu Leu Gln Thr Ser Ile Asp Val Trp Ser Trp Cys Leu Glu Ser Ser
20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
35 40 45

Ala Cys Arg Leu Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
85 90 95

Gly Ser Ala Gln Arg Arg Ala Glu Glu Glu Thr Ala Gly Gly Asp Gly
100 105 110

Arg Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Gln Pro Asp Gly Leu Glu Gln
165 170 175

Val Leu Glu Pro Asp Thr Glu Lys Ala Asp Gly Pro Tyr Arg Val Glu
180 185 190

His Phe Arg Trp Gly Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
210 215 220

Ala Ile Ile Lys Asn Val His Lys Lys Gly Gln
225 230 235

<210> 19

<211> 708
 <212> DNA
 <213> Mus musculus

<400> 19
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 agcaacctgc tggcttgcat ccgggcttgc aaactcgacc tctcgctgga gacgcccgtg 180
 tttcctggca acggagatga acagcccctg actgaaaacc cccggaagta cgtcatgggt 240
 cacttccgct gggaccgctt cggccccagg aacagcagca gtgctggcag cgcggcgcag 300
 aggcgtgcgg aggaagaggc ggtgtgggga gatggcagtc cagagccgag tccacgcgag 360
 ggcaagcgct cctactccat ggagcacttc cgctggggca agccggtggg caagaaacgg 420
 cgcccgggtga aggtgtaccc caacgttgct gagaacgagt cggcggaggc ctttccccta 480
 gagttcaaga gggagctgga aggcgagcgg ccattaggct tggagcaggt cctggagtcc 540
 gacgcggaga aggacgacgg gccctaccgg gtggagcact tccgctggag caaccgccc 600
 aaggacaagc gttacggtgg cttcatgacc tccgagaaga gccagacgcc cctggtgacg 660
 ctcttcaaga acgcatcat caagaacgcg cacaagaagg gccagtga 708

<210> 20
 <211> 235
 <212> PRT
 <213> Mus musculus

<400> 20
 Met Pro Arg Phe Cys Tyr Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
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 Leu Leu Gln Thr Ser Ile Asp Val Trp Ser Trp Cys Leu Glu Ser Ser
 20 25 30
 Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
 35 40 45
 Ala Cys Lys Leu Asp Leu Ser Leu Glu Thr Pro Val Phe Pro Gly Asn
 50 55 60
 Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Pro Arg Asn Ser Ser Ser Ala Gly
85 90 95

Ser Ala Ala Gln Arg Arg Ala Glu Glu Glu Ala Val Trp Gly Asp Gly
100 105 110

Ser Pro Glu Pro Ser Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu
115 120 125

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Val Lys
130 135 140

Val Tyr Pro Asn Val Ala Glu Asn Glu Ser Ala Glu Ala Phe Pro Leu
145 150 155 160

Glu Phe Lys Arg Glu Leu Glu Gly Glu Arg Pro Leu Gly Leu Glu Gln
165 170 175

Val Leu Glu Ser Asp Ala Glu Lys Asp Asp Gly Pro Tyr Arg Val Glu
180 185 190

His Phe Arg Trp Ser Asn Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
195 200 205

Met Thr Ser Glu Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn
210 215 220

Ala Ile Ile Lys Asn Ala His Lys Lys Gly Gln
225 230 235

<210> 21

<211> 759

<212> DNA

<213> Gallus gallus

<400> 21

atgcggggcg cgctgtgcca cagcctgccc gtggtgctgg ggctgctgct gtgtcacccc 60

accaccgccca gcggcccatg ctgggagaac agcaagtgcc aggacctggc caccgaggct 120

ggtgttttgc aggcgtgtgc caaggcatgc cgtgctgagc tgtcggccga ggcacccgtg 180

taccggggca atgggcacct gcagcccctc tcggagagca tccgcaagta cgtgatgagc 240

catttccgct ggaacaagtt cggccgtcgc aacagcagca gcggagggca caaaaggag 300

gaggtggccg gcctcgccct gcctgccgcg tcacccacc accccgccgg ggaggaggaa 360

gatggagaag ggttggaacg agaggaaggg aagcgctcct actccatgga gcattttccgc 420
tggggcaagc cgggtggggcg gaagaggaga cccatcaagg tgtaccccaa cgggggtggac 480
gaggagtcgg ctgagagtta ccccatggag ttccggaggg agatggcgcc cgatggggac 540
cccttcggcc tctccgagga ggaggaagaa gaggaggaag aggaaggcga ggaggaaaag 600
aaggatggag gctcgtaccg catgcggcac ttccgctggc acgcgccgct gaaggacaag 660
cgctacggcg gcttcatgag cttggagcac agccagaccc cgctgatgac tctgttcaaa 720
aacgccatcg tcaaaagcgc ctacaagaag ggtcagtga 759

<210> 22
<211> 251
<212> PRT
<213> Gallus gallus

<400> 22

Met Arg Gly Ala Leu Cys His Ser Leu Pro Val Val Leu Gly Leu Leu
1 5 10 15

Leu Cys His Pro Thr Thr Ala Ser Gly Pro Cys Trp Glu Asn Ser Lys
20 25 30

Cys Gln Asp Leu Ala Thr Glu Ala Gly Val Leu Ala Cys Ala Lys Ala
35 40 45

Cys Arg Ala Glu Leu Ser Ala Glu Ala Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ser Glu Ser Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Ser Ser Gly Gly His
85 90 95

Lys Arg Glu Glu Val Ala Gly Leu Ala Leu Pro Ala Ala Ser Pro His
100 105 110

His Pro Ala Gly Glu Glu Glu Asp Gly Glu Gly Leu Glu Arg Glu Glu
115 120 125

Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
130 135 140

Gly Arg Lys Arg Arg Pro Ile Lys Val Tyr Pro Asn Gly Val Asp Glu
 145 150 155 160

Glu Ser Ala Glu Ser Tyr Pro Met Glu Phe Arg Arg Glu Met Ala Pro
 165 170 175

Asp Gly Asp Pro Phe Gly Leu Ser Glu Glu Glu Glu Glu Glu Glu
 180 185 190

Glu Glu Gly Glu Glu Glu Lys Lys Asp Gly Gly Ser Tyr Arg Met Arg
 195 200 205

His Phe Arg Trp His Ala Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe
 210 215 220

Met Ser Leu Glu His Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn
 225 230 235 240

Ala Ile Val Lys Ser Ala Tyr Lys Lys Gly Gln
 245 250

<210> 23
 <211> 780
 <212> DNA
 <213> Bufo marinus

<400> 23
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 ggtgaggtca agagtcagtg ctgggagagc ggtaaattgtg cagatctgac gagcgaggat 120
 gggataactgg aatgtattaa agactgcaag atggctcctgt ctgcagagtc accagtgttt 180
 cctgggaatg gacacatgca acccctctct gaaaacatca ggaagtatgt catgagccac 240
 ttccgctgga ataagtttgg ccgaaggaat agcaccggtg gcgatagcaa caacgcaggt 300
 tacaaacggg aagatatagc caactacccc atatttaacc tgttccccac taatgacaac 360
 caaaacacac aagatggcaa catggaagaa gaactacgca ggcaagacaa caagaggtca 420
 tattctatgg aacacttccg atggggtaaa ccagtcggga aaaaaaggag acctattaag 480
 gttttcccaa gcgatgctga agaagaatca tctgaaatct scccaacaga gtacagaaga 540
 gagttgtctg tagagtttga ctaccccgat accaactctg aagaagacat ggacgacagc 600
 atgttgatgg aaagcccaaa tagaaaagat cggaagtata aaatgcatca ttttcgatgg 660

gaaggtccac ccaaagacaa aagatatgga ggattcatga cccctgagcg cagtcagact 720
ccactaatga ctcttttcaa aaatgccatt atcaaaaatg cccacaagaa ggggtcaataa 780

<210> 24
<211> 259
<212> PRT
<213> Bufo marinus

<220>
<221> misc_feature
<222> (174)..(174)
<223> Xaa can be any naturally occurring amino acid

<400> 24

Met Leu Gln Pro Gly Trp Arg Cys Ile Leu Thr Ile Leu Gly Ala Phe
1 5 10 15

Ile Phe His Val Gly Glu Val Lys Ser Gln Cys Trp Glu Ser Gly Lys
20 25 30

Cys Ala Asp Leu Thr Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Asp
35 40 45

Cys Lys Met Val Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Gly Asp Ser
85 90 95

Asn Asn Ala Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe
100 105 110

Asn Leu Phe Pro Thr Asn Asp Asn Gln Asn Thr Gln Asp Gly Asn Met
115 120 125

Glu Glu Glu Leu Arg Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu
130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg Arg Pro Ile Lys
145 150 155 160

Val Phe Pro Ser Asp Ala Glu Glu Glu Ser Ser Glu Ile Xaa Pro Thr
165 170 175

Glu Tyr Arg Arg Glu Leu Ser Val Glu Phe Asp Tyr Pro Asp Thr Asn
180 185 190

Ser Glu Glu Asp Met Asp Asp Ser Met Leu Met Glu Ser Pro Asn Arg
195 200 205

Lys Asp Arg Lys Tyr Lys Met His His Phe Arg Trp Glu Gly Pro Pro
210 215 220

Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
225 230 235 240

Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys
245 250 255

Lys Gly Gln

<210> 25
<211> 669
<212> DNA
<213> Cyprinus carpio

<400> 25
atggtgaggg gagagaggat gttgtgtcct gcttggctct tggctctggc tgttctgtgt 60
gctggtggat ctgaagtcag agctcagtgt atggaggacg cccgctgcag agacctcacc 120
actgatgaga acatcttggg ctgcatacag ctatgcaggt ctgatctgac agatgaaacc 180
cccgtctacc ctggagaaaag ccatttgcag cctccctctg agctggagca aaccgaggtc 240
ctcgtacccc tgtccccagc ggccctcgct cctgctgagc aaatggaccc cgagtccagc 300
cctcagcacg agcacaagcg ctctactcc atggagcatt tccgctgggg aaagccagtg 360
ggtcgcaagc gcaggcctat caaggtgtac accaacggcg tggaggagga atccaccgag 420
actctcccag ctgagatgag gcgagagctg gctacaaacg agatcgacta tcctcaagag 480
gagggcgctt taaaccagca ggataagaag gatggctcct acaaaatgag ccatttccgc 540
tggagcagcc cgcctgctag caagcgctat ggaggcttca tgaagtcctg ggacgagcgc 600
agtcagaaac cccttctcac gctcttcaaa aacgtcataa acaaagagca ccagaagaag 660

<210> 26
<211> 222
<212> PRT
<213> Cyprinus carpio

<400> 26

Met Val Arg Gly Glu Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
1 5 10 15

Ala Val Leu Cys Ala Ala Gly Ser Glu Val Arg Ala Gln Cys Met Glu
20 25 30

Asp Ala Arg Cys Arg Asp Leu Thr Thr Asp Glu Asn Ile Leu Asp Cys
35 40 45

Ile Gln Leu Cys Arg Ser Asp Leu Thr Asp Glu Thr Pro Val Tyr Pro
50 55 60

Gly Glu Ser His Leu Gln Pro Pro Ser Glu Leu Glu Gln Thr Glu Val
65 70 75 80

Leu Val Pro Leu Ser Pro Ala Ala Leu Ala Pro Ala Glu Gln Met Asp
85 90 95

Pro Glu Ser Ser Pro Gln His Glu His Lys Arg Ser Tyr Ser Met Glu
100 105 110

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
115 120 125

Val Tyr Thr Asn Gly Val Glu Glu Glu Ser Thr Glu Thr Leu Pro Ala
130 135 140

Glu Met Arg Arg Glu Leu Ala Thr Asn Glu Ile Asp Tyr Pro Gln Glu
145 150 155 160

Glu Gly Ala Leu Asn Gln Gln Asp Lys Lys Asp Gly Ser Tyr Lys Met
165 170 175

Ser His Phe Arg Trp Ser Ser Pro Pro Ala Ser Lys Arg Tyr Gly Gly
180 185 190

Phe Met Lys Ser Trp Asp Glu Arg Ser Gln Lys Pro Leu Leu Thr Leu
 195 200 205

Phe Lys Asn Val Ile Asn Lys Glu His Gln Lys Lys Asp Gln
 210 215 220

<210> 27
 <211> 669
 <212> DNA
 <213> Danio rerio

<400> 27
 atggtgaggg gagtgaggat gttgtgtcct gcttggctct tggctctggc tgttctctgc 60
 gcaggaggat ctgaagtcag agctcagtg tgggaaaatg cccgctgtcg agacctcagc 120
 acagaggaga acatcttggga atgcatacaa ttatgcaggt ctgaacttac agatgaaacc 180
 cccgtctacc ctggagaaaag ccatctacag cctccctccg agccggagca aatcgacctc 240
 ctcgcacacc tttccctgt agcactcgca gccctgaac agatagagcc ggagtccggc 300
 cctcgacacg accacaagcg ctctactcc atggaacact tccggtgggg caaaccggtc 360
 ggccgcaaac gcagacccat caaggtgtac acgaacggcg tggaagagga atccgccgaa 420
 acgcttccgg aagagatgag acgcgagctg gcaaataacg aggtcgacta tccgcaagaa 480
 gagatgcctt taaacccact gggaaagaag gacccccctt acaaaatgac ccatttccgc 540
 tggagcgctc cgccggctag caagcgctat ggaggcttca tgaagtcttg ggacgagcgt 600
 gctcagaaac cactgctcac actcttcaaa aacgtaatgc ataaaggcca accgaggaag 660
 gatgagtga 669

<210> 28
 <211> 222
 <212> PRT
 <213> Danio rerio

<400> 28

Met Val Arg Gly Val Arg Met Leu Cys Pro Ala Trp Leu Leu Ala Leu
 1 5 10 15

Ala Val Leu Cys Ala Gly Gly Ser Glu Val Arg Ala Gln Cys Trp Glu
 20 25 30

Asn Ala Arg Cys Arg Asp Leu Ser Thr Glu Glu Asn Ile Leu Glu Cys

35	40	45
Ile Gln Leu Cys Arg Ser Glu Leu Thr Asp Glu Thr Pro Val Tyr Pro		
50	55	60
Gly Glu Ser His Leu Gln Pro Pro Ser Glu Pro Glu Gln Ile Asp Leu		
65	70	75
		80
Leu Ala His Leu Ser Pro Val Ala Leu Ala Ala Pro Glu Gln Ile Glu		
	85	90
		95
Pro Glu Ser Gly Pro Arg His Asp His Lys Arg Ser Tyr Ser Met Glu		
	100	105
		110
His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys		
	115	120
		125
Val Tyr Thr Asn Gly Val Glu Glu Glu Ser Ala Glu Thr Leu Pro Glu		
	130	135
		140
Glu Met Arg Arg Glu Leu Ala Asn Asn Glu Val Asp Tyr Pro Gln Glu		
145	150	155
		160
Glu Met Pro Leu Asn Pro Leu Gly Lys Lys Asp Pro Pro Tyr Lys Met		
	165	170
		175
Thr His Phe Arg Trp Ser Val Pro Pro Ala Ser Lys Arg Tyr Gly Gly		
	180	185
		190
Phe Met Lys Ser Trp Asp Glu Arg Ala Gln Lys Pro Leu Leu Thr Leu		
	195	200
		205
Phe Lys Asn Val Met His Lys Gly Gln Pro Arg Lys Asp Glu		
	210	215
		220

<210> 29
 <211> 792
 <212> DNA
 <213> Rana catesbeiana

<400> 29
 atgttgacagc cagtctggca cgcctgtatc ctggcaatac ttgggggtgtt catatttcat 60
 gtcggagagg tccggagcca gtgctgggaa agcaataagt gtacagattt aagcagcgaa 120

gatggcattc tggaatgtat caaagcatgc aagatggacc tctctgcaga atctcccgctg 180
tttcccgga atggccacat ccagcccctt tctgaaaaca tcaggaaata tgtcatgagc 240
cactttcgct ggaataaatt tggtagaagg aacagcacca gcaatgacaa caacaacaac 300
aatggtggct ataagcggga ggatattgcc aactacccta tattgaacct gttccttggc 360
agcgacaacc aaaacacaca ggagggaatt atggaagatg acgccttgga taggcaagac 420
agcaaaaggt cttattccat ggagcacttc cgatggggaa aaccgcgcgg caagaagagg 480
aggcctatca aagttttccc cacagatgct gaagaagagt cctcagaaag tttccccatt 540
gagctgagaa gagagctctc tctagagttt gactatcctg acaccaactc cgaagaagaa 600
ttggataatg gcgagctgct agaaggtcca gttaaaaaag gtaggaagta caaaatgcac 660
catttccgat gggaaggacc tcccaaagac aagcggtatg gtggatttat gaccccagag 720
agaagccaga cacctttaat gactcttttc aagaatgcta taattaagaa cgcccacaaa 780
aagggccagt ag 792

<210> 30

<211> 263

<212> PRT

<213> Rana catesbeiana

<400> 30

Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
1 5 10 15

Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
20 25 30

Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
85 90 95

Asn Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr

100

105

110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
 115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
 130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
 145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Glu Ser Ser Glu
 165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
 180 185 190

Pro Asp Thr Asn Ser Glu Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
 195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
 210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
 225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
 245 250 255

Asn Ala His Lys Lys Gly Gln
 260

<210> 31
 <211> 272
 <212> PRT
 <213> Monodelphis domestica

<400> 31

Met Pro Lys Pro Ser Trp Ser Tyr Leu Gly Ala Leu Leu Val Ala Val
 1 5 10 15

Leu Phe Gln Ala Ser Val Glu Val His Gly Trp Cys Leu Gln Ala Ser
 20 25 30

Asn Cys Arg Asp Ser Lys Ala Glu Asp Gly Leu Val Glu Cys Ile Lys
35 40 45

Ser Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly Gln Tyr Glu Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ile Ser Ser Gly Ser
85 90 95

Ile Ser Ser Asp Gly Gly Asn Val Gly Gln Lys Arg Gln Glu Leu Met
100 105 110

Gln Gly Asp Phe Leu Asp Leu Pro Pro Pro Gly Val Trp Gly Glu Asp
115 120 125

Glu Glu Met Gln Glu Gly Leu Pro Leu Ile Arg Lys Ala Arg Glu Leu
130 135 140

Gln Asn Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
145 150 155 160

Val Gly Lys Lys Arg Arg Pro Val Lys Ile Tyr Pro Asn Gly Val Glu
165 170 175

Glu Glu Ser Ala Glu Ser Tyr Pro Val Glu Ile Arg Arg Asp Leu Pro
180 185 190

Met Lys Ile Asn Phe Pro Glu Tyr Pro Glu Leu Ala Ile Asp Glu Glu
195 200 205

Glu Ala Ala Lys Glu Val Tyr Glu Glu Lys Val Lys Lys Asp Gly Gly
210 215 220

Gly Tyr Lys Met Glu His Phe Arg Trp Gly Thr Pro Pro Lys Asp Lys
225 230 235 240

Arg Tyr Gly Gly Phe Met Ile Ser Glu Lys Ser His Thr Pro Leu Met
245 250 255

Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Gly His Lys Lys Gly Gln
 260 265 270

<210> 32
 <211> 263
 <212> PRT
 <213> Ovis aries

<220>
 <221> misc_feature
 <222> (184)..(184)
 <223> Xaa can be any naturally occurring amino acid

<400> 32

Met Pro Arg Leu Cys Ser Ser Arg Ser Gly Ala Leu Leu Leu Val Leu
 1 5 10 15

Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
 20 25 30

Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Ala Cys Ile Arg
 35 40 45

Ala Cys Lys Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn
 50 55 60

Gly Asp Glu Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly
 65 70 75 80

His Phe Arg Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe
 85 90 95

Gly Ala Gly Gly Ala Ala Gln Lys Arg Glu Glu Glu Val Ala Val Gly
 100 105 110

Glu Gly Pro Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu
 115 120 125

Asp Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
 130 135 140

Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp
 145 150 155 160

Glu Ser Ala Gln Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr Gly
165 170 175

Glu Arg Leu Glu Gln Ala Arg Xaa Pro Glu Ala Gln Ala Glu Ser Ala
180 185 190

Ala Ala Arg Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala
195 200 205

Ala Glu Lys Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp
210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu
225 230 235 240

Lys Ser Gln Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 33
<211> 212
<212> PRT
<213> Ovis aries

<220>
<221> misc_feature
<222> (120)..(121)
<223> Xaa can be any naturally occurring amino acid
<400> 33

Pro Asp Leu Ser Ala Glu Thr Pro Val Phe Pro Gly Asn Cys Asp Glu
1 5 10 15

Gln Pro Leu Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg
20 25 30

Trp Asp Arg Phe Gly Arg Arg Asn Gly Ser Ser Ser Phe Gly Ala Gly
35 40 45

Gly Ala Ala Gln Lys Arg Glu Glu Val Ala Val Gly Glu Gly Pro
50 55 60

Gly Pro Arg Gly Asp Gly Ala Glu Thr Gly Pro Arg Glu Asp Lys Arg
65 70 75 80

Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys
85 90 95

Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu Asp Glu Ser Ala
100 105 110

Gln Ala Phe Pro Leu Glu Phe Xaa Xaa Glu Leu Thr Gly Glu Arg Leu
115 120 125

Glu Gln Ala Arg Gly Pro Glu Ala Gln Ala Glu Ser Ala Ala Ala Arg
130 135 140

Ala Glu Leu Glu Tyr Gly Leu Val Ala Glu Ala Glu Ala Ala Glu Lys
145 150 155 160

Lys Asp Ser Gly Pro Tyr Lys Met Glu His Phe Arg Trp Gly Ser Pro
165 170 175

Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Lys Ser Gln
180 185 190

Thr Pro Leu Val Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His
195 200 205

Lys Lys Gly Gln
210

<210> 34
<211> 263
<212> PRT
<213> Rana catesbeiana

<400> 34

Met Leu Gln Pro Val Trp His Ala Cys Ile Leu Ala Ile Leu Gly Val
1 5 10 15

Phe Ile Phe His Val Gly Glu Val Arg Ser Gln Cys Trp Glu Ser Asn
20 25 30

Lys Cys Thr Asp Leu Ser Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn
50 55 60

Gly His Ile Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Ser Asn Asp
85 90 95

Asn Asn Asn Asn Asn Gly Gly Tyr Lys Arg Glu Asp Ile Ala Asn Tyr
100 105 110

Pro Ile Leu Asn Leu Phe Leu Gly Ser Asp Asn Gln Asn Thr Gln Glu
115 120 125

Gly Ile Met Glu Asp Asp Ala Leu Asp Arg Gln Asp Ser Lys Arg Ser
130 135 140

Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Lys Lys Arg
145 150 155 160

Arg Pro Ile Lys Val Phe Pro Thr Asp Ala Glu Glu Glu Ser Ser Glu
165 170 175

Ser Phe Pro Ile Glu Leu Arg Arg Glu Leu Ser Leu Glu Phe Asp Tyr
180 185 190

Pro Asp Thr Asn Ser Glu Glu Glu Leu Asp Asn Gly Glu Leu Leu Glu
195 200 205

Gly Pro Val Lys Lys Gly Arg Lys Tyr Lys Met His His Phe Arg Trp
210 215 220

Glu Gly Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys
245 250 255

Asn Ala His Lys Lys Gly Gln
260

<210> 35
<211> 258
<212> PRT
<213> Spea multiplicata

<400> 35

Met Leu Cys Pro Val Trp Ser Cys Leu Phe Ala Val Leu Gly Val Phe
1 5 10 15

Val Phe His Val Gly Glu Val Arg Gly Gln Cys Trp Gln Ser Ala Lys
20 25 30

Cys Met Asp Leu Glu Ser Glu Asp Gly Ile Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Ile Phe Pro Gly Asn Gly
50 55 60

His Leu Gln Pro Leu Ala Glu Asn Val Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Thr Thr Gly Asn Glu Gly
85 90 95

Asn Ser Gly Ser Lys Arg Glu Asp Ile Ala Asn Tyr Pro Ile Phe Asn
100 105 110

Leu Phe Pro Ser Ser Asn Gly Gln Asn Thr Glu Asp Asn Met Trp Lys
115 120 125

Lys Tyr Gln Asp Arg Gln Asp Asn Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Phe Pro Asn Gly Met Glu Glu Glu Ser Ser Glu Ser Tyr Pro Met Glu
165 170 175

Leu Arg Arg Glu Leu Ser Leu Glu Asp Asp Tyr Pro Glu Ile Asp Ser
180 185 190

Glu Asp Asp Leu Asp Tyr Asn Asp Leu Leu Ser Met Pro Lys Phe Lys

195

200

205

Gly Gly Asp Tyr Arg Ile His His Phe Arg Trp Gly Ser Pro Pro Lys
 210 215 220

Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr Pro
 225 230 235 240

Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala His Lys Lys
 245 250 255

Ala Gln

<210> 36
 <211> 259
 <212> PRT
 <213> Xenopus laevis

<400> 36

Met Phe Arg Pro Leu Trp Gly Cys Phe Leu Ala Ile Leu Gly Ile Cys
 1 5 10 15

Ile Phe His Ile Gly Glu Val Gln Ser Gln Cys Trp Glu Ser Ser Arg
 20 25 30

Cys Ala Asp Leu Ser Ser Glu Asp Gly Val Leu Glu Cys Ile Lys Ala
 35 40 45

Cys Lys Thr Asp Leu Ser Ala Glu Ser Pro Val Phe Pro Gly Asn Gly
 50 55 60

His Leu Gln Pro Leu Ser Glu Ser Ile Arg Lys Tyr Val Met Thr His
 65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Arg Asn Ser Thr Gly Asn Asp Gly
 85 90 95

Ser Asn Thr Gly Tyr Lys Arg Glu Asp Ile Ser Ser Tyr Pro Val Phe
 100 105 110

Ser Leu Phe Pro Leu Ser Asp Gln Asn Ala Pro Gly Asp Asn Met Glu
 115 120 125

Glu Glu Pro Leu Asp Arg Gln Glu Asn Lys Arg Ala Tyr Ser Met Glu
 130 135 140

His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys
 145 150 155 160

Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ala Glu Ser Tyr Pro Met
 165 170 175

Glu Leu Arg Arg Glu Leu Ser Leu Glu Leu Asp Tyr Pro Glu Ile Asp
 180 185 190

Leu Asp Glu Asp Ile Glu Asp Asn Glu Val Lys Ser Ala Leu Thr Lys
 195 200 205

Lys Asn Gly Asn Tyr Arg Met His His Phe Arg Trp Gly Ser Pro Pro
 210 215 220

Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu Arg Ser Gln Thr
 225 230 235 240

Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ser His Lys
 245 250 255

Lys Gly Gln

<210> 37
 <211> 262
 <212> PRT
 <213> Necturus maculosus

<220>
 <221> misc_feature
 <222> (129)..(129)
 <223> Xaa can be any naturally occurring amino acid

<400> 37

Met Leu Lys Pro Val Trp Ser Cys Leu Phe Ala Thr Leu Gly Ala Leu
 1 5 10 15

Leu Cys Gln Thr Val Val Ala His Ser Gln Cys Trp Glu Ser Ser Lys
 20 25 30

Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Gln Phe Gly Arg Lys Asn Ser Thr Val Ala Ser Gly
85 90 95

Asn Gly Ala Gly Ser Lys Arg Glu Glu Leu Ser Gly Asn Pro Ile Ile
100 105 110

Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala His Asp Ser
115 120 125

Xaa Lys Glu Gly Glu Val Met Asp Arg Gln Asp Asn Lys Arg Ser Tyr
130 135 140

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg
145 150 155 160

Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ser Glu Ser
165 170 175

Tyr Pro Leu Glu Leu Lys Arg Asp Leu Ser Leu Gly Leu Glu Tyr Pro
180 185 190

Glu Phe Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Val Met Val Val
195 200 205

Leu Pro Glu Lys Lys Asp Gly Asn Tyr Arg Met His His Phe Arg Trp
210 215 220

Gly Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn
245 250 255

Ala His Lys Lys Gly Gln
260

<210> 38
<211> 262
<212> PRT
<213> Amphiuma means

<400> 38

Met Leu Arg Pro Val Trp Ser Cys Leu Pro Ala Thr Leu Gly Ala Leu
1 5 10 15

Leu Cys Gln Thr Ala Gly Ala Asn Ser Gln Cys Trp Glu Ser Ser Lys
20 25 30

Cys Arg Asp Leu Ala Thr Glu Gly Ser Val Leu Glu Cys Ile Lys Ala
35 40 45

Cys Lys Val Glu Leu Ser Ala Glu Ser Pro Val Tyr Pro Gly Asn Gly
50 55 60

His Met Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser His
65 70 75 80

Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Thr Ser Val Ser Gly
85 90 95

Asn Ser Ala Gly Asn Lys Arg Glu Glu Leu Ser Asn Asn Pro Ile Ile
100 105 110

Ser Leu Phe Thr Thr Ser Glu Ser Gln Ser Ser Gly Ala Asp Asp Gly
115 120 125

Asn Lys Glu Gly Glu Ala Met Glu Arg Gln Asp Ser Lys Arg Ser Tyr
130 135 140

Ser Met Glu His Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg
145 150 155 160

Pro Ile Lys Val Tyr Pro Asn Gly Val Glu Glu Glu Ser Ser Glu Ser
165 170 175

Tyr Pro Leu Glu Leu Arg Arg Asp Leu Ser Leu Gly Leu Asp Tyr Pro
180 185 190

Asp Ser Asp Ser Gln Glu Gly Leu Glu Asn Asn Glu Ile Thr Thr Gly
195 200 205

Leu Thr Lys Lys Asn Asp Lys Gln Tyr Arg Ile Gly His Phe Arg Trp
210 215 220

Gly Ser Pro Leu Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Pro Glu
225 230 235 240

Arg Ser Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Lys Asn
245 250 255

Ala His Lys Lys Gly Gln
260

<210> 39
<211> 261
<212> PRT
<213> Pelodiscus sinensis

<400> 39

Met Leu Lys Pro Val Arg Ser Gly Leu Leu Ala Ile Leu Gly Val Leu
1 5 10 15

Leu Phe His Ala Asp Gly Gly Val His Ser Gln Cys Trp Asp Ser Ser
20 25 30

Arg Cys Arg Glu Leu Ser Thr Asp Ala Gly Leu Leu Glu Cys Ile Lys
35 40 45

Ala Cys Lys Met Asp Leu Ser Asp Glu Ser Pro Met Tyr Pro Gly Asn
50 55 60

Gly His Leu Gln Pro Leu Ser Glu Asn Ile Arg Lys Tyr Val Met Ser
65 70 75 80

His Phe Arg Trp Asn Lys Phe Gly Arg Lys Asn Ser Ser Ser Ser Val
85 90 95

Ala Gly His Lys Arg Glu Glu Ile Pro Ser His Leu Leu Leu Gly Leu
100 105 110

Phe Pro Asp Val Ala Pro Ala Gln Arg Gly Asp Asp Gly Glu Gly Gly
115 120 125

Ala Ala Leu Glu Arg Gln Asp Ser Lys Arg Ser Tyr Ser Met Glu His
130 135 140

Phe Arg Trp Gly Lys Pro Val Gly Arg Lys Arg Arg Pro Ile Lys Val
145 150 155 160

Tyr Pro Ser Glu Val Glu Glu Glu Ser Ala Glu Ser Tyr Pro Pro Glu
165 170 175

Phe Arg Arg Asp Leu Ser Met Glu Leu Asp Tyr Pro Glu Phe Glu Ser
180 185 190

Leu Glu Asp Pro Glu Ser Glu Glu Ala Leu Val Ser Glu Glu Ala Glu
195 200 205

Lys Lys Asp Gly Asn Ser Tyr Lys Met His His Phe Arg Trp Asn Ala
210 215 220

Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe Met Thr Ser Glu Ser Ser
225 230 235 240

Gln Thr Pro Leu Met Thr Leu Phe Lys Asn Ala Ile Ile Lys Asn Ala
245 250 255

Tyr Lys Lys Gly Gln
260

<210> 40

<211> 187

<212> PRT

<213> Pan troglodytes

<400> 40

Ser Ala Glu Thr Pro Met Phe Pro Gly Asn Gly Asp Glu Gln Pro Leu
1 5 10 15

Thr Glu Asn Pro Arg Lys Tyr Val Met Gly His Phe Arg Trp Asp Arg
20 25 30

Phe Gly Arg Arg Asn Ser Ser Ser Ser Ser Gly Ser Gly Ala Gly
35 40 45

Gln Lys Arg Glu Asp Val Ser Ala Gly Glu Asp Arg Gly Pro Leu Pro
 50 55 60

Glu Gly Gly Pro Glu Pro Arg Ser Asp Gly Ala Lys Pro Gly Pro Arg
 65 70 75 80

Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
 85 90 95

Val Gly Lys Lys Arg Arg Pro Val Lys Val Tyr Pro Asn Gly Ala Glu
 100 105 110

Asp Glu Ser Ala Glu Ala Phe Pro Leu Glu Phe Lys Arg Glu Leu Thr
 115 120 125

Gly Gln Arg Pro Arg Glu Gly Asp Gly Pro Asp Gly Pro Ala Asp Asp
 130 135 140

Gly Ala Gly Ala Gln Ala Asp Leu Glu His Ser Leu Leu Val Ala Ala
 145 150 155 160

Glu Lys Lys Asp Glu Gly Pro Tyr Arg Met Glu His Phe Arg Trp Gly
 165 170 175

Ser Pro Pro Lys Asp Lys Arg Tyr Gly Gly Phe
 180 185

<210> 41
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

<400> 41
 gcttgcaaac tcgacctctc

<210> 42
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

<400> 42
cttgatgatg gcgttcttga 20

<210> 43
<211> 22
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 43
agggcatcag aaggcctgac ca 22

<210> 44
<211> 22
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 44
cttgaagaag cggcagtagc ac 22

<210> 45
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 45
gcttgcaaac tcgacctctc 20

<210> 46
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 46
cttgatgatg gcgttcttga 20

<210> 47
<211> 21
<212> DNA
<213> Artificial

<220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

 <400> 47
 atggggctgt gtggactgac c 21

 <210> 48
 <211> 22
 <212> DNA
 <213> Artificial

 <220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

 <400> 48
 gtcaggagag caagtttcat tt 22

 <210> 49
 <211> 22
 <212> DNA
 <213> Artificial

 <220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

 <400> 49
 agggcatcag aaggcctgac ca 22

 <210> 50
 <211> 22
 <212> DNA
 <213> Artificial

 <220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

 <400> 50
 cttgaagaag cggcagtagc ac 22

 <210> 51
 <211> 18
 <212> DNA
 <213> Artificial

 <220>
 <223> SYNTHETIC OLIGONUCLEOTIDE

 <400> 51
 agcaaccgga gtggcagt 18

 <210> 52

<211> 18
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 52
ggccacgatc aaggagag 18

<210> 53
<211> 19
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 53
agtctctggg gaaggggca 19

<210> 54
<211> 20
<212> DNA
<213> Artificial

<220>
<223> SYNTHETIC OLIGONUCLEOTIDE

<400> 54
caactgatga tgatcccgac 20